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PHOTOGRAPHIC INTERPRETATION REPORT

VITEL 1-100000-001

**CENTRAL AEROHYDRODYNAMIC
INSTITUTE (TsAGI)**

RAMENSKOYE, USSR

Declass Review by NIMA/DOD

APRIL 1967
COPY 116
6 PAGES

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CENTRAL AEROHYDRODYNAMIC INSTITUTE (TsAGI), RAMENSKOYE, USSR

INTRODUCTION

This report is a study of the chronological development of the Central Aerohydrodynamic Institute (TsAGI) imeni N. Ye. Zhukovskiy (Ramenskoye Aircraft Experimental Plant). The installation is located approximately 19 nautical miles south-east of the center of Moskva, USSR, at 56-35N 038-07E (Figure 1). It is situated on a main rail line and is adjacent to the Moscow/Ramenskoye Airfield. Other transportation services include a network of hard-surfaced roads and the Moskva River, a major navigable waterway.

The Central Aerohydrodynamic Institute (hereafter referred to by its Russian acronym, TsAGI) is one of the most important of all the installations associated with aerospace programs in the Soviet Union. It has been the Soviet leader in the aerodynamic field, and in recent years it has been considered the leader in the aerospace field. The functions of TsAGI are probably very similar to many of those conducted in the United States by the National Aeronautics and Space Administration.

The fenced area of TsAGI covers approximately 300 acres, and recent expansion to the north will incorporate an additional 150 to 200 acres. A building-by-building construction history of TsAGI is presented graphically in Figure 4 and in tabular form in Table 1 which also contains interpretations of the probable functions of all the structures and comments on various details of the chronology. Aerial photographs of the installation as it appeared in [] and again in [] are shown on Figures 2 and 3, respectively. The information contained in this report has been compiled from all available aerial and ground photography. All item numbers mentioned in the text are listed in Table 1 and are keyed to Figure 4.

HIGHLIGHTS OF THE CHRONOLOGICAL DEVELOPMENT OF THE CENTRAL AEROHYDRODYNAMIC INSTITUTE

1941

TsAGI was first observed on [] photography of [] and [] at which time it contained 8 major structures, 4 small structures, 2 spray ponds (items 27 and 42), and a large transformer yard (item 7). Among the major structures present at that time were the large laboratory building (item 37) and the vertical wind tunnel (item 77). [] photography

revealed no new construction or changes in previously existing facilities.

1947

The first ground photography of TsAGI was obtained in [] Coverage consisted of a single photograph of the installation taken from a position some distance west of the western perimeter fence. As seen on this photograph, the installation had apparently undergone little or no significant change since []

1953

Ground photography of [] taken from approximately the same angle and position as that of [] revealed that a large expansion program was under way. Many new facilities had already been completed, and others were under construction. Significant new construction included 5 laboratory buildings (items 9, 22, 29, 33, and 56) and a large combination laboratory/administration building (item 70). Construction of 2 bottle farms (items 45 and 46) and of the underground laboratory (item 53) were nearing completion.

1956

Ground photography of [] taken from approximately the same angle and position as before, revealed several new facilities consisting of a laboratory building (item 20), a combination administration/engineering building (item 84), and a large bottle farm (item 44). [] ground photography revealed no significant new construction or changes to facilities.

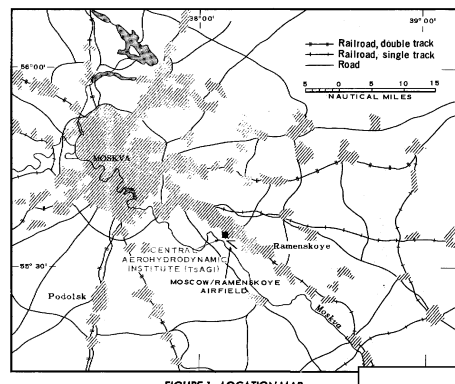


FIGURE 1. LOCATION MAP.

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1962

[] photography of [] provided the first usable photographic coverage of TsAGI since [] This photography revealed a continued expansion of TsAGI facilities. Significant construction observed for the first time included 4 laboratory buildings (items 2, 5, 8, and 75), a large bottle farm (item 30), a large shop building (item 60), 2 spray ponds (items 26 and 41), and an aircraft engine test building (item 17). In addition, 2 older laboratory buildings (items 29 and 36) had been enlarged.

1963

Significant construction occurring by [] included the completion of a shop building (item 62), the addition of 2 more bottle farms (items 38 and 39), and the completion of additions to a laboratory building (item 75) and to a large shop building (item 67). By [] a laboratory building (item 34), an administration/engineering building (item 78), an administration building (item 81), and an engineering/shop building (item 86) were all in very early stages of construction.

1964

A large laboratory building (item 55) and an additional bottle farm (item 40) were in very early stages of construction when first seen in [] The engineering/shop building (item 86) was completed in [] and construction had begun on a new section of the laboratory/administration building (item 71).

1965

It became evident during 1965 that TsAGI was in the initial process of another large-scale expansion program. A probable aircraft engine test building (item 15), an assembly building (item 90), and an assembly/shop building (item 91) were in very early stages of construction in [] The assembly building (item 90) and the assembly/shop building (item 91) are located in an area which has apparently been annexed by TsAGI for expansion purposes. This area borders on the northern edge of the original installation, and much of it has been fenced.

1966

Construction completed during 1966 consisted mainly of a laboratory building (item 34) and 2 administration buildings (items 78 and 81). A large laboratory building (item 55, first observed under construction in [] and a bottle farm were also completed during the year. No new construction was observed; however, considerable progress was made on the probable aircraft engine test building (item 15), the assembly building (item 90), and the assembly/shop building (item 91).

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FIGURE 2. THE CENTRAL AEROHYDRODYNAMIC INSTITUTE,

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FIGURE 3. THE CENTRAL AEROHYDRODYNAMIC INSTITUTE

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Table 1. Functions, Dimensions, Roof Cover, and Chronology of Structures at the Central Aerohydrodynamic Institute. (Item numbers are keyed to Figure 4)

Item No	Probable Function	Dimensions (ft)			Roof Cover (sq ft)	Date First Observed*	Comments	Item No	Probable Function	Dimensions (ft)			Roof Cover (sq ft)	Date First Observed*	Comments
		Length	Width	Height						Length	Width	Height			
1	Utility bldg	100	20	--	2,000			45	Bottle farm	--	--	--	--		A total of 48 horizontal bottles (each 24 in diam) aligned in 2 rows of 24 bottles each
2	Laboratory bldg	200	285	70	79,500			46	Bottle farm	--	--	--	--		A total of 32 horizontal bottles (each 24 in diam) aligned in 2 rows of 16 bottles each
3	Utility bldg	Irregular	--	--	6,800			47	Compressor and control bldg	125	65	--	8,125		Serves items 44, 45 and 46
4	Utility bldg	155	30	--	6,975			48	Utility bldg	55	45	--	2,475		Probably controls the ventilation for the underground laboratory (item 53)
5	Laboratory bldg	Irregular	--	45	16,875			49	Utility bldg	95	50	--	4,750		
6	Laboratory bldg	Irregular	--	--	21,175			50	Utility bldg	140	40	--	5,600		
7	Transformer yard	--	--	--	--			51	Utility bldg	50	30	--	1,500		
8	Laboratory bldg	235	120	60	28,200		Enclosed area contains 2 small bldgs for service and repair of transformers 3 nearby forced-draft cooling towers serve the laboratory	52	Utility bldg	40	35	--	1,400		
9	Laboratory bldg	Irregular	--	65	89,900			53	Underground laboratory	--	--	--	--		Probably consists of wind tunnels and other laboratory facilities
10	Utility bldg	130	40	--	5,200			54	Utility bldg	Irregular	--	--	8,700		
11	Utility bldg	140	40	--	5,600			55	Laboratory bldg	Irregular	70	--	58,750		
12	Admin/engineering bldg	135	40	30	5,400			56	Laboratory bldg	Irregular	--	--	15,100		
13	Storage bldg, revetted	Irregular	--	--	1,600			57	Laboratory bldg	120	70	45	8,400		
14	Utility bldg	40	15	--	600			58	Utility bldg	80	40	--	3,200		
15	Aircraft engine test bldg	280	100	--	28,000		Early stage of construction precludes determination of number, size, and type of test cells	59	Possible compressor bldg	160	50	35	8,000		
16	Fuel storage and control facility	--	--	--	--		Area is served by a rail spur	60	Shop bldg	Irregular	50	--	44,750		Bldg enlarged between [redacted] and [redacted]
17	Aircraft engine test bldg	Irregular	--	--	8,175		Bldg contains at least 1 large test cell and is equipped with a noise suppressor approximately 10 ft tall	61	Utility bldg	65	30	--	1,950		
18	Utility bldg	35	30	--	1,050			62	Shop bldg	250	105	35	26,250		
19	Utility bldg	40	20	--	1,200			63	Warehouse	265	75	--	19,875		
20	Laboratory bldg	Irregular	--	35	33,150			64	Utility bldg	45	30	--	1,350		
21	Utility bldg	25	30	--	500			65	Warehouse	180	30	--	5,400		
22	Laboratory bldg	160	125	50	20,000			66	Transshipment bldg	250	70	35	17,500		
23	Utility bldg	70	30	--	1,400			67	Shop bldg	Irregular	55	--	96,800		
24	Utility bldg	40	25	--	1,000			68	Utility bldg	155	25	--	3,825		
25	Utility bldg	Irregular	--	--	1,950			69	Utility bldg	45	25	--	1,125		
26	Spray pond	140	110	--	--			70	Laboratory/admin bldg	Irregular	60	--	25,000		
27	Spray pond	130	105	--	--			71	Laboratory/admin bldg	Irregular	50	--	46,050		Bldg enlarged between [redacted] and [redacted]
28	Utility bldg	75	35	--	2,625			72	Shop bldg	155	80	35	9,300		
29	Laboratory bldg	Irregular	--	40	76,675		Bldg enlarged prior to [redacted]	73	Control bldg for item 74	70	30	--	3,300		
30	Bottle farm	--	--	--	--		A total of 60 horizontal bottles (each 24 in diam) aligned in 2 rows of 3 tiers each; each tier comprises 15 bottles	74	Helicopter rotor test bed	--	--	--	--		Consists of a large (75 x 75 x 40 ft b) probable steel cage anchored on a concrete apron
31	Laboratory bldg	Irregular	--	45	32,850			75	Laboratory bldg	Irregular	50	--	24,875		Bldg enlarged between [redacted] and [redacted]
32	Utility bldg	75	20	--	1,500			76	Guardhouse and control point	120	65	--	7,800		
33	Laboratory bldg	Irregular	--	70	44,050			77	Vertical wind tunnel	--	--	--	--		The bldg enclosing the test section measures 110 x 55 x 80 ft h
34	Laboratory bldg	Irregular	--	50	41,475			78	Admin/engineering bldg	Irregular	80	--	25,875		
35	Laboratory bldg	Irregular	--	65	83,900			79	Utility bldg	140	60	--	8,400		
36	Shop bldg	Irregular	--	40	7,800		Bldg enlarged between [redacted] and [redacted]	80	Admin bldg	Irregular	35	--	25,550		
37	Laboratory bldg	Irregular	65-125	--	371,200			81	Admin bldg	170	40	65	6,800		
38	Bottle farm	--	--	--	--		A total of 36 horizontal bottles (each 24 in diam) aligned in 2 rows of 2 tiers each; each tier comprises 9 bottles	82	Warehouse	120	40	--	4,800		
39	Bottle farm	--	--	--	--		A total of 38 horizontal bottles (each 24 in diam) aligned in 2 rows of 2 tiers each; each tier comprises 9 bottles	83	Utility bldg	Irregular	--	--	3,100		
40	Bottle farm	--	--	--	--		A total of 39 horizontal bottles (each 24 in diam) aligned in 2 rows of 2 tiers each; each tier comprises 9 bottles	84	Admin/engineering bldg	Irregular	50	--	37,450		
41	Spray pond	160	105	--	--			85	Utility bldg	100	70	--	7,000		
42	Spray pond	130	105	--	--			86	Engineering/shop bldg	Irregular	30	--	34,725		Bldg enlarged between [redacted] and [redacted]
43	Pump and valve house	80	40	--	3,200		Pump and valve house located on top of a covered water reservoir	87	Admin bldg	200	45	50	9,000		
44	Bottle farm	--	--	--	--		A total of 58 horizontal bottles (each 24 in diam) aligned in 2 rows of 3 tiers each; each tier comprises 32 bottles	88	Admin bldg	175	40	50	7,000		
								89	Admin bldg	Irregular	--	--	6,725		
								90	Assembly bldg	855	385	--	148,225		Early stage of construction
								91	Assembly/shop bldg	810	275	40	85,250		Early stage of construction
								92	Warehouse	220	40	--	8,800		Probable temporary bldg
								93	Warehouse	150	40	--	6,000		Probable temporary bldg
								94	Warehouse	190	20	--	3,800		Probable temporary bldg
								95	Warehouse	170	20	--	3,400		Probable temporary bldg

*Completion dates are not stated because of gaps in photographic coverage. Most of the small structures were apparently complete when first observed. Where determinable, completion dates of the major structures are presented in the text.

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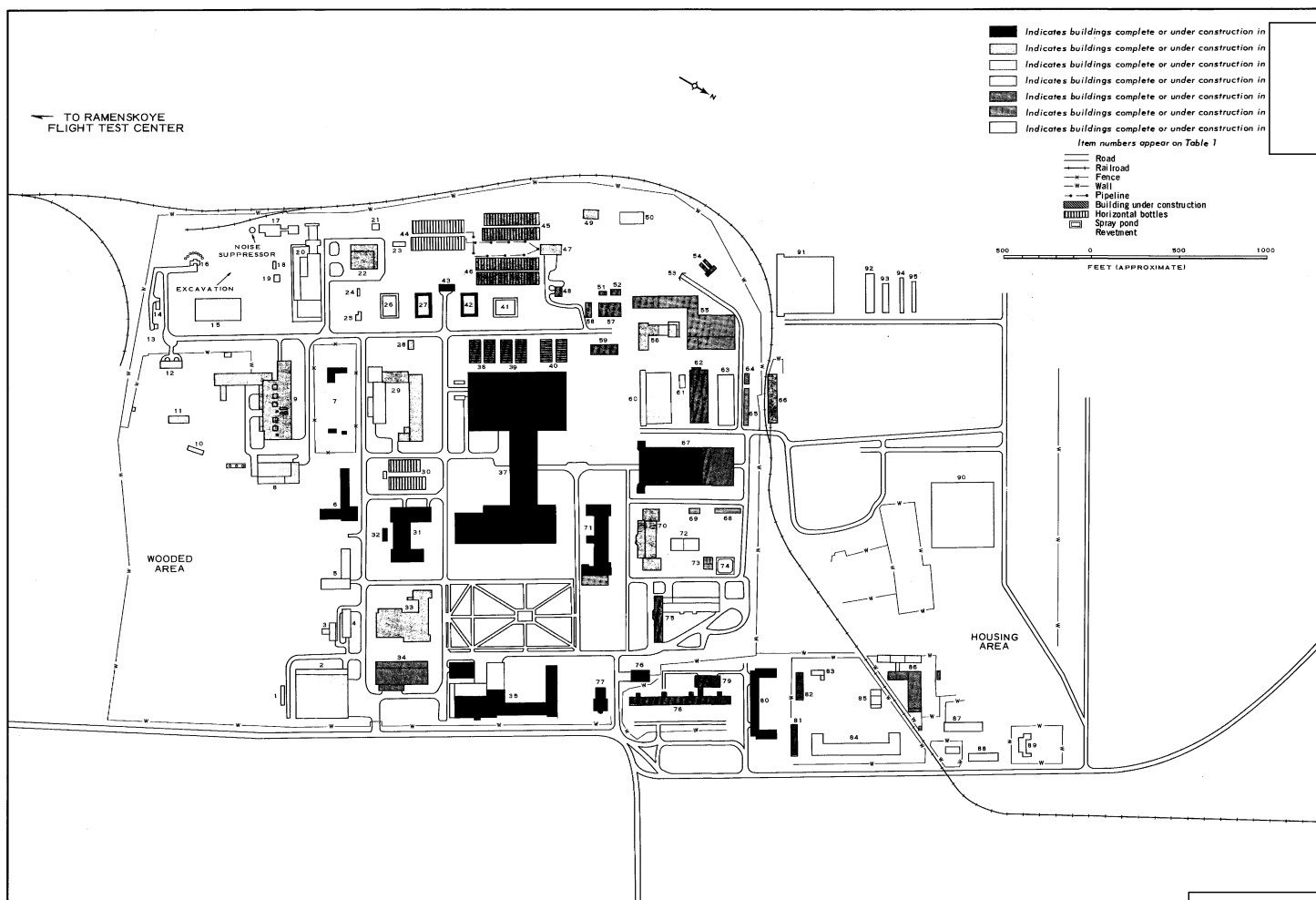


FIGURE 4. LINE DRAWING SHOWING THE CHRONOLOGICAL DEVELOPMENT OF THE CENTRAL AEROHYDRODYNAMIC INSTITUTE.

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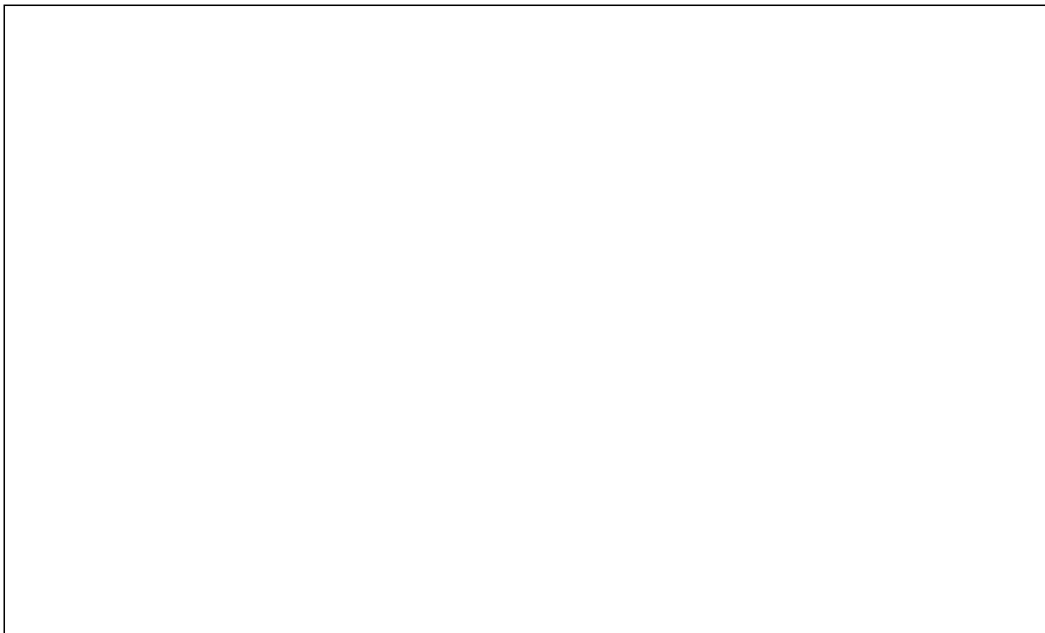


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REFERENCES

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MAPS OR CHARTS

ACIC series, scale 1:200,000

REQUIREMENT

CIA. C-DI5-82,973

NPIC PROJECT

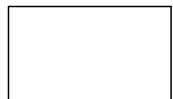
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